

CLAIMS

The invention claimed is:

- 5 1. A wireless communication device comprising:
a physical layer adapted to transmit a reservation request (RR) about an
impending transmission of data;
a second layer on top of the physical layer, the second layer adapted to
generate a tag about the impending transmission and impart the tag in the RR; and
10 a network layer on top of the second layer,
wherein the second layer includes a tag generation module for encoding in the
tag a priority of the impending transmission.
- 15 2. A wireless communication device comprising:
a physical layer adapted to receive a reservation request (RR);
a second layer on top of the physical layer, the second layer adapted to receive
the RR from the physical layer; and
a network layer on top of the second layer,
wherein the second layer is adapted to process and finally resolve the received
20 RR without accessing the network layer.
3. The device of claim 2, wherein
the second layer includes a BME, a RME and a SME.
- 25 4. The device of claim 2, wherein
the second layer reads a tag from the RR to determine a priority.
5. The device of claim 2, wherein
the second layer is adapted to process and finally resolve the RR based on QoS
30 considerations.
7. A device comprising:
a physical medium; and

a processor coupled with the physical medium, wherein the processor is adapted to

generate a reservation request for transmitting data;
determine a priority for transmitting the data;
5 generate a tag that encodes the priority;
pass the data and the tag to a medium access control layer;
examine the data to determine a required bandwidth for transmission;
encode the tag and the bandwidth in a reservation request frame; and
then transmit the reservation request frame.

10 8. γ The device of claim 7, wherein the processor is further adapted to:
store the data in a buffer after passing it and prior to examining it.

9. ζ The device of claim 7, wherein
15 the priority is determined based on one of a default class and an AP-designated class.

10. ζ A device comprising:
a physical medium; and
20 a processor coupled with the physical medium, wherein the processor is adapted to
receive a reservation request frame;
decompose the reservation request frame to extract a reservation request;
decode a tag from the reservation request while in the medium access control
25 layer;
read the tag to identify a priority while in the medium access control layer;
examine the priority against available resources while in the medium access control layer; and
finally resolve the reservation request in terms of the examined priority while
30 still in the medium access control layer.

11. θ The device of claim 10, wherein the processor is adapted to resolve the reservation request by:

determining that there are insufficient resources for meeting the reservation request; and

generating and transmitting a Reservation Request Reject frame.

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5 12. The device of claim 10, wherein the processor is adapted to resolve the reservation request by:

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scheduling a transmission opportunity based on the priority.

13. An article comprising: a storage medium, said storage medium having stored
10 thereon instructions, that, when executed by at least one device, result in:

generating a reservation request for transmitting data;

determining a priority for transmitting the data;

generating a tag that encodes the priority;

passing the data and the tag to a medium access control layer;

15 examining the data to determine a required bandwidth for transmission;

encoding the tag and the bandwidth in a reservation request frame; and

then transmitting the reservation request frame.

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20 14. The article of claim 13, wherein the instructions further result in:
storing the data in a buffer after passing it and prior to examining it.

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15. The article of claim 13, wherein
the priority is determined based on one of a default class and an AP-
designated class.

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25 16. An article comprising: a storage medium, said storage medium having stored
thereon instructions, that, when executed by at least one device, result in:

receiving a reservation request frame;

decomposing the reservation request frame to extract a reservation request;

30 decoding a tag from the reservation request while in the medium access
control layer;

reading the tag to identify a priority while in the medium access control layer;

examining the priority against available resources while in the medium access
control layer; and

finally resolving the reservation request in terms of the examined priority while still in the medium access control layer.

17. ¹⁶ The article of claim 16, wherein the instructions result in resolving by:
5 determining that there are insufficient resources for meeting the reservation request; and
generating and transmitting a Reservation Request Reject frame.

18. ¹⁷ The article of claim 16, wherein the instructions result in resolving by:
10 scheduling a transmission opportunity based on the priority.

19. ¹⁸ A method comprising:
generating a reservation request for transmitting data;
determining a priority for transmitting the data;
15 generating a tag that encodes the priority;
passing the data and the tag to a medium access control layer;
examining the data to determine a required bandwidth for transmission;
encoding the tag and the bandwidth in a reservation request frame; and
then transmitting the reservation request frame.

20. ¹⁹ The method of claim 19, further comprising:
storing the data in a buffer after passing it and prior to examining it.

21. ²⁰ The method of claim 19, wherein
25 the priority is determined based on one of a default class and an AP-designated class.

22. ²¹ A method comprising:
receiving a reservation request frame;
30 decomposing the reservation request frame to extract a reservation request;
decoding a tag from the reservation request while in the medium access control layer;
reading the tag to identify a priority while in the medium access control layer;

examining the priority against available resources while in the medium access control layer; and

finally resolving the reservation request in terms of the examined priority while still in the medium access control layer.

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23. The method of claim 22, wherein resolving includes:
determining that there are insufficient resources for meeting the reservation request; and
generating and transmitting a Reservation Request Reject frame.

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24. The method of claim 22, wherein resolving includes:
scheduling a transmission opportunity based on the priority.